

Comprehensive Post-Migration Checklist



This checklist is a comprehensive guide for experienced or new DBAs and database architects to navigate post-migration processes. It's designed to streamline the completion of database migrations, mitigating risks and enhancing the efficiency of the newly migrated database system.

Data and functionality

Data integrity checks:

- Confirm the complete transfer of all tables and datasets.
- Inspect for any data corruption incidents that occurred during migration.
- Ensure primary and foreign keys are correctly established.

Data consistency checks:

- Run queries for data consistency.
- Perform a comparative analysis of random data samples against the original database.

Compatibility evaluation:

- Verify system compatibility, including data formats, software, and hardware integrations.
- Assess and fix any disparities in character sets and data encoding formats.

Functionality assessment:

- Conduct comprehensive tests on all stored procedures, triggers, and database functions.
- Validate integration with applications using the database.

Index and query optimization:

- Review and optimize database indexes.
- Conduct detailed analyses and improvements on essential queries.

Client application checks:

- Confirm the accurate connection and functionality of client applications.
- Perform extensive end-to-end testing to ensure application reliability and performance.

External dependencies check:

- Authenticate configurations for linked servers and external data sources.
- Check integrations with other systems and data warehouses.

Verification of custom scripts and automated jobs:

- Test all custom scripts and automated tasks, including cron jobs, for functionality and reliability.

Error handling procedures:

- Test error handling mechanisms within the database and in integrated applications.

Cloud-specific considerations (if applicable)

- For cloud-based migrations, ensure cloud-specific configurations, such as auto-scaling, resource allocation, and managed services integrations, are appropriately set up.

Security and compliance

Security validation:

- Confirm the effective implementation of critical security measures, including access controls and encryption protocols.
- Verify full compliance with relevant data protection and privacy regulations.

Audit trails analysis:

- Examine audit trails for their integrity and operational functionality.
- Validate the complete and accurate recording of historical data within the system.

License and regulatory compliance review:

- Review all licensing arrangements to ensure they align with the requirements of the new setup.
- Proactively identify and address any emerging compliance concerns or regulatory obligations.

Performance, efficiency, and scalability

Performance validation:

- Execute thorough performance testing to gauge efficiency.
- Benchmark the current system performance against metrics recorded before migration.

Resource utilization monitoring:

- Monitor CPU, memory, disk I/O, and network usage.
- Assess resource usage in comparison to pre-established benchmarks for consistency.

Stress testing procedures:

- Implement comprehensive stress tests to evaluate system performance under high-load conditions.
- Thoroughly assess the system's scalability and resilience in response to increased demands.

Load balancer and network checks:

- Test load balancer configurations and network routing specific to database traffic.

Backup, recovery, and high availability

Backup and recovery configuration:

- Establish and rigorously test new backup procedures to ensure reliability.
- Execute thorough tests of the recovery process to confirm effectiveness.

Failover and redundancy tests:

- Conduct tests on failover mechanisms to assess their responsiveness and reliability.
- Examine redundancy solutions, such as replication or clustering systems, for their robustness and operational integrity.

Disaster recovery plan update:

- Revise and update the disaster recovery plan to align with new system configurations.
- Perform a comprehensive test run of the updated disaster recovery plan.

Monitoring and documentation

Logging and monitoring:

- Deploy and evaluate logging and monitoring systems for comprehensive coverage.
- Regularly review system logs to identify and address any errors or anomalies.

Update documentation:

- Update existing documentation to reflect changes made during the migration accurately.
- Thoroughly document any new procedures, system configurations, or architectural modifications post-migration.

User verification and training

User and role verification:

- Confirm accurate migration and configuration of user accounts and roles.
- Conduct tests to verify appropriate user access levels and permission settings.

Service Level Agreements (SLAs) review:

- Reevaluate and adjust SLAs to align with updated performance metrics and operational realities.

Training:

- Provide training for new tools or technologies introduced.

Finalization and ongoing maintenance/monitoring

Final sign-off and contingency planning:

- Secure formal approval from key stakeholders to affirm migration success.
- Develop a rollback plan to address any unforeseen issues post-sign-off swiftly.

Ongoing optimization and tuning:

- Implement a strategic plan for regular database optimization and fine-tuning.
- Establish routine health checks and maintenance.

Post-migration support plan:

- Establish a dedicated support structure to resolve post-migration challenges promptly.
- Designate and train key personnel to provide ongoing, specialized support.

Periodic performance and security audits:

- Schedule and regularly evaluate database performance and security to maintain optimal operation.

This comprehensive checklist is tailored for adaptability across various database types and migration scenarios, including MySQL, MongoDB, PostgreSQL, and others. It encompasses a thorough approach to post-migration tasks, ensuring careful attention to data integrity, functionality, performance, security, and compliance. Additionally, it covers critical areas such as backup, recovery, monitoring, user integration, and ongoing maintenance and is designed to assist you through the steps to complete your database migration successfully.

However, should you encounter any challenges or require specialized assistance, Percona is here to help. We distinguish ourselves through a unique combination of technical excellence, steadfast commitment to open source, technology-agnostic expertise, and a deep focus on customer success. We offer a no-obligation database migration assessment and can design a migration strategy that aligns with your distinct business needs, budget, and goals. Our team will guide you through each step, ensuring a smooth and successful transition to your new database environment.

[Learn more about Percona migration services](#)